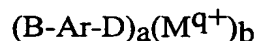


What is claimed is:

1. A hand dishwashing composition comprising:

- a) 0.1% to 99.9% by weight of said composition of an alkylarylsulfonate surfactant system comprising from 10% to 100% by weight of said surfactant system of two or more crystallinity-disrupted alkylarylsulfonate surfactants of formula



wherein D is SO_3^- , M is a cation or cation mixture, q is the valence of said cation, a and b are numbers selected such that said composition is electroneutral; Ar is selected from benzene, toluene, and combinations thereof; and B comprises the sum of at least one primary hydrocarbyl moiety containing from 5 to 20 carbon atoms and one or more crystallinity-disrupting moieties, wherein said crystallinity-disrupting moieties interrupt or branch from said hydrocarbyl moiety; and wherein said alkylarylsulfonate surfactant system has crystallinity disruption to the extent that its Sodium Critical Solubility Temperature, as measured by the CST Test, is no more than 40°C; and

wherein further said alkylarylsulfonate surfactant system has at least one of the following properties:

- percentage biodegradation, as measured by the modified SCAS test, that exceeds tetrapropylene benzene sulfonate; and
weight ratio of nonquaternary to quaternary carbon atoms in B of at least 5:1; and
- b) from 0.00001% to 99.9% by weight of said composition of a conventional hand dishwashing adjunct;
- c) from 0.01% to 7% by weight of composition of a divalent ion selected from the group consisting of magnesium, calcium and mixtures thereof.

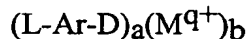
2. A hand dishwashing composition according to Claim 1 further comprising from at 0.0001% to 10% by weight of said composition of a deterative enzyme, wherein said deterative enzyme is selected from the group consisting of proteases, cellulases, lipases, amylases, peroxidases, and mixtures thereof.

3. A hand dishwashing composition according to any of Claims 1 to 2 wherein Ar is benzene.

4. A hand dishwashing composition according to any of Claims 1 to 3 wherein said crystallinity-disrupted alkylarylsulfonate surfactants include at least two isomers selected from:

- i) ortho-, meta- and para- isomers based on positions of attachment of substituents to Ar, when Ar is a substituted or unsubstituted benzene;
- ii) positional isomers based on positions of attachment of substituents to B; and
- iii) stereoisomers based on chiral carbon atoms in B.

5. A hand dishwashing composition to any of Claims 1 to 4 wherein the alkylarylsulfonate surfactant system further comprises from 0% to 85% by weight of said surfactant system of one or more noncrystallinity-disrupted alkylarylsulfonate surfactants of formula:



wherein D, M, q, a, b, Ar, are as defined for the crystallinity-disrupted alkylarylsulfonate surfactants; and L is a linear hydrocarbyl moiety containing from 5 to 20 carbon atoms.

6. A hand dishwashing composition according to any of Claims 1 to 5 wherein said crystallinity-disrupted alkylarylsulfonate surfactants include two or more homologs, and two or more isomers of at least one of the homologs.

7. A hand dishwashing composition according to any of Claims 1 to 6 wherein B includes both odd and even carbon chain lengths.

8. A hand dishwashing composition according to any of Claims 1 to 7 wherein the primary moiety of B is exactly one linear hydrocarbyl moiety having from 7 to 16 carbon atoms and wherein said crystallinity-disrupting moiety or moieties are selected from:

- i) branches attached to B selected from C1-C3 alkyl, C1-C3 alkyloxy, hydroxy and mixtures thereof;
- ii) moieties which interrupt the structure of B, selected from ether, sulfone, silicone; and
- iii) mixtures thereof.

9. A hand dishwashing composition according to any of Claims 1 to 8 wherein at least 60% by weight of said surfactant system of said crystallinity-disrupted alkylarylsulfonate

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surfactants is in the form of isomers wherein, Ar is attached to B at the second or third carbon atom in said linear hydrocarbonyl moiety thereof.

10. A hand dishwashing composition according to any of Claims 1 to 9 wherein said cleaning composition is in the form of a liquid, paste, liqui-gel, gel, microemulsion, liquid crystal, granule, agglomerate or a powder.

11. A hand dishwashing composition according to any of Claims 1 to 10 wherein said cleaning composition adjunct further comprising a surfactant selected from the group consisting of alkylene carbonates, monoalkyl succinamates, alkylpolysaccharides, ethoxylated glycerol type compound and mixtures thereof.

12. A hand dishwashing composition according to any of Claims 1 to 11 wherein said alkylarylsulfonate surfactant system has crystallinity disruption to the extent that its Sodium Critical Solubility Temperature, as measured by the CST Test, is no more than 20°C.

13. A hand dishwashing composition according to any of Claims 1 to 12 wherein said alkylarylsulfonate surfactant system has crystallinity disruption to the extent that its Calcium Critical Solubility Temperature, as measured by the CST Test, is no more than 80°C.

14. A hand dishwashing composition according to any of Claims 1 to 13 wherein said percentage biodegradation, as measured by the modified SCAS Test, is at least 60%.

15. A hand dishwashing composition according to any of Claims 1 to 14 wherein said conventional hand dishwashing adjunct is selected from the group consisting of surfactants other than (a), builders, deterative enzymes, at least partially water-soluble or water dispersible polymers, abrasives, bactericides, tarnish inhibitors, dyes, solvents, hydrotropes, perfumes, thickeners, antioxidants, processing aids, suds boosters, suds suppressors, suds stabilizers, diamines, carriers, enzyme stabilizers, anti-oxidants, polysaccharides, buffers, anti-fungal agents, mildew control agents, insect repellents, anti-corrosive aids, chelants and mixtures thereof.

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16. A hand dishwashing composition according to any of Claims 1 to 15 further comprising a nonionic surfactant at a level of from 0.5% to 25% by weight of said detergent composition, and wherein said nonionic surfactant is a polyalkoxylated alcohol in capped or non-capped form having:

- a hydrophobic group selected from linear C₁₀-C₁₆ alkyl, mid-chain C₁-C₃ branched C₁₀-C₁₆ alkyl, guerbet branched C₁₀-C₁₆ alkyl, and mixtures thereof and
- a hydrophilic group selected from 1-15 ethoxylates, 1-15 propoxylates 1-15 butoxylates and mixtures thereof, in capped or uncapped form.

17. A hand dishwashing composition according to any of Claims 1-16 further comprising an alkyl sulfate surfactant at a level of from 0.5% to 25% by weight of said detergent composition, wherein said alkyl sulfate surfactant has a hydrophobic group selected from linear C₁₀-C₁₈ alkyl, mid-chain C₁-C₃ branched C₁₀-C₁₈ alkyl, guerbet branched C₁₀-C₁₈ alkyl, and mixtures thereof and a cation selected from Na, K and mixtures thereof.

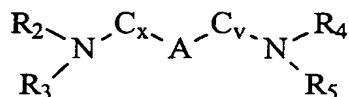
18. A hand dishwashing composition according to any of Claims 1-17 further comprising an alkyl(polyalkoxy)sulfate surfactant at a level of from 0.5% to 25% by weight of said detergent composition, wherein said alkyl(polyalkoxy)sulfate surfactant has

- a hydrophobic group selected from linear C₁₀-C₁₆ alkyl, mid-chain C₁-C₃ branched C₁₀-C₁₆ alkyl, guerbet branched C₁₀-C₁₆ alkyl, and mixtures thereof; and
- a (polyalkoxy)sulfate hydrophilic group selected from 1-15 polyethoxysulfate, 1-15 polypropoxysulfate, 1-15 polybutoxysulfate, 1-15 mixed poly(ethoxy/propoxy/butoxy)sulfates, and mixtures thereof, in capped or uncapped form; and
- a cation selected from Na, K and mixtures thereof.

19. A hand dishwashing composition according to any of Claims 1 to 18 further comprising a surfactant, wherein said surfactant is selected from the group consisting anionic, nonionic, amphoteric, zwitterionic and mixtures thereof.

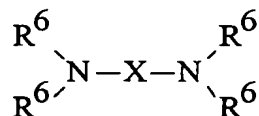
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20. A hand dishwashing composition according to any of Claims 1 to 19 further comprising an organic diamine, wherein said diamine is selected from the group consisting of:

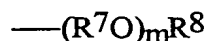


wherein R_{2-5} are independently selected from H, methyl, ethyl, and ethylene oxides; C_x and C_y are independently selected from methylene groups or branched alkyl groups where $x+y$ is from 3 to 6; and A is optionally present and is selected from electron donating or withdrawing moieties chosen to adjust the diamine pKa's to the desired range; wherein if A is present, then both x and y must be 2 or greater.

21. A hand dishwashing composition according to any of Claims 1 to 20 further comprising an organic diamine, wherein said diamine has the formula:

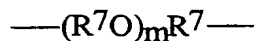


wherein each R^6 is independently selected from the group consisting of hydrogen, C_1 - C_4 linear or branched alkyl, alkyleneoxy having the formula:



wherein R^7 is C_2 - C_4 linear or branched alkylene, and mixtures thereof; R^8 is hydrogen, C_1 - C_4 alkyl, and mixtures thereof; m is from 1 to 10; X is a unit selected from:

- i) C_3 - C_{10} linear alkylene, C_3 - C_{10} branched alkylene, C_3 - C_{10} cyclic alkylene, C_3 - C_{10} branched cyclic alkylene, an alkyleneoxyalkylene having the formula:



wherein R^7 and m are the same as defined herein above;

- ii) C_3 - C_{10} linear, C_3 - C_{10} branched linear, C_3 - C_{10} cyclic, C_3 - C_{10} branched cyclic alkylene, C_6 - C_{10} arylene, wherein said unit comprises one or more

electron donating or electron withdrawing moieties which provide said diamine with a pK_a greater than 8; and

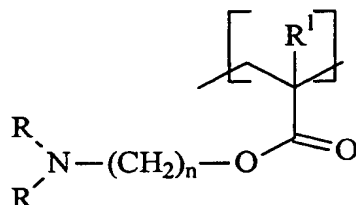
iii) mixtures of (i) and (ii)

provided said diamine has a pK_a of at least 8.

22. A hand dishwashing composition according to any one of Claims 20-21 wherein said diamine is selected from the group consisting of dimethyl aminopropyl amine, 1,6-hexane diamine, 1,3 propane diamine, 2-methyl 1,5 pentane diamine, 1,3-Pentanediamine, 1,3-diaminobutane, 1,2-bis(2-aminoethoxy)ethane, Isophorone diamine, 1,3-bis(methylamine)-cyclohexane and mixtures thereof.
23. A hand dishwashing composition according to any one of Claims 1-22, further comprising an anionic surfactant, wherein said anionic surfactant is selected from the group consisting of alkyl sulfates, alkyl alkoxy sulfates, linear alkylbenzene sulfonate, alpha olefin sulfonate, paraffin sulfonates, methyl ester sulfonates, alkyl sulfonates, alkyl alkoxyated sulfates, sarcosinates, taurinates, alkyl alkoxy carboxylate, and mixtures thereof.
24. A hand dishwashing composition according to any one of Claims 1-23, further comprising a nonionic surfactant, wherein said nonionic surfactant is selected from the group consisting of alkylethoxylates, polyhydroxy fatty acid amides, alkyl polyglycosides, alkyl ethoxylates, and mixtures thereof.
25. A hand dishwashing composition according to any one of Claims 1-24, further comprising an amphoteric surfactant, wherein said amphoteric surfactant is selected from the group consisting of betaines, sulfobetaines, amine oxide and mixtures thereof.
26. A hand dishwashing composition according to any one of Claims 1-25 further comprising a polymeric suds stabilizer selected from the group consisting of:

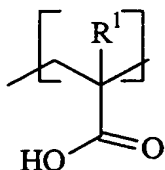
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- i) homopolymers of (N,N-dialkylamino)alkyl acrylate esters having the formula:



wherein each R is independently hydrogen, C₁-C₈ alkyl, and mixtures thereof, R¹ is hydrogen, C₁-C₆ alkyl, and mixtures thereof, n is from 2 to 6; and

- ii) copolymers of (i) and



wherein R¹ is hydrogen, C₁-C₆ alkyl, and mixtures thereof; provided that the ratio of (ii) to (i) is from 2 to 1 to 1 to 2; and wherein said polymeric suds stabilizer has a molecular weight of from 1,000 to 2,000,000 daltons.

27. A method of washing tableware said method comprising contacting soiled tableware in need of cleaning with an aqueous solution of the composition according to any one of Claims 1-26.

28. A method according to claim 27, further comprising the step of diluting said composition with water.

29. A method according to claim 27, further comprising the step of applying said composition directly to a sponge or a washcloth.